Claims PTO
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AMW

Claim 1 (Currently Amended): A bar code reader provided with a laser diode and a rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a rotation position detection means for detecting a rotation position of the rotatory optical deflector at a position corresponding to a reading start edge of a laser beam scanning range of a bar code;

a means for starting bar code reading by rotating the rotatory optical deflector again after stopping rotation of the rotatory optical deflector for only a predetermined time length upon the rotation position detection means detecting the rotation position of the rotatory optical deflector; and

a means for stopping the rotation of the rotatory optical deflector for only a predetermined time length upon a laser beam scanning time length reaching a preset scanning time length up to [[the]] a final position of the bar code reading after the bar code reading is started by the means for starting the bar code reading.

Claim 2 (Currently Amended): A bar code reader provided with a laser diode and a rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a rotation position detection means for detecting a rotation position of the rotatory optical

deflector at a position before a reading start edge of a laser beam scanning range of a bar code;

a means for starting bar code reading by rotating the rotatory optical deflector again after stopping rotation of the rotatory optical deflector for only a predetermined time length upon a laser beam scanning time length reaching a preset scanning time length up to a reading start position after the rotation position detection means detecting the rotation position of the rotatory optical deflector; and

a means for stopping the rotation of the rotatory optical deflector for only a predetermined time length upon a laser beam scanning time length reaching a preset scanning time length up to [[the]] a final position of the bar code reading after the bar code reading is started by the means for starting the bar code reading.

Claim 3 (Currently Amended): A bar code reader provided with a laser diode and a rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a means for selecting either automatic scanning or manual scanning;

a rotation position detection means for detecting a rotation position of the rotatory optical deflector at a position corresponding to a reading start edge of a laser beam scanning range of a bar code;

a means comprising a function of starting bar code reading by rotating the rotatory optical deflector again after stopping rotation of the rotatory optical deflector for only a predetermined time length upon the rotation position detection means detecting the rotation position of the rotatory optical deflector in a case of the automatic scanning being selected, and a function of subsequently stopping the rotation of the rotatory optical deflector for only a predetermined time

length upon a laser beam scanning time length reaching a preset scanning time length up to a [[the]] final position of the bar code reading; and

a means for stopping rotation of the rotatory optical deflector through locking upon the laser beam scanning time length reaching a preset scanning time length up to [[the]] a center position of the laser beam scanning range of the bar code after the rotation position detection means detecting the rotation position of the rotatory optical deflector in a case of the manual scanning being selected.

Claim 4 (Currently Amended): A bar code reader provided with a laser diode and a rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a means for selecting either automatic scanning or manual scanning;

a rotation position detection means for detecting a rotation position of the rotatory optical deflector at a position corresponding to a reading start edge of a laser beam scanning range of a bar code;

a means comprising a function of stopping rotation of the rotatory optical deflector for only a predetermined time length upon a laser beam scanning time length reaching a preset scanning time length up to a reading start position of the bar code reading after the rotation position detection means detecting the rotation position of the rotatory optical deflector in a case of the automatic scanning being selected, and a function of subsequently starting bar code reading by rotating the rotatory optical deflector again and stopping rotation of the rotatory optical deflector for only a predetermined time length upon the laser beam scanning time length reaching a preset scanning time length up to [[the]] a final reading position of the bar code

reading; and

a means for stopping rotation of the rotatory optical deflector through locking upon the laser beam scanning time length reaching a preset scanning time length up to [[the]] a center position of the laser beam scanning range of the bar code after the rotation position detection means detecting the rotation position of the rotatory optical deflector in a case of the manual scanning being selected.

Claim 5 (Original): A bar code reader according to claim 1, further comprising a means for setting the scanning time length up to the final position of the bar code reading.

Claim 6 (Original): A bar code reader according to claim 1, further comprising a means for setting the predetermined time length during which rotation of the rotatory optical deflector is stopped.

Claim 7 (Currently Amended): A bar code reader according to claim 1, wherein the rotation position detection means is comprised of a sensing indicator provided on the rotatory optical deflector, and a reflection [[type]] photosensor for sensing the sensing indicator, disposed in vicinity of a passage of the sensing indicator.

Claim 8 (Currently Amended): A bar code reader according to claim 2, wherein the rotation position detection means is comprised of a sensing indicator provided on the rotatory optical deflector, and a reflection [[type]] photosensor for sensing the sensing indicator, disposed in vicinity of a passage of the sensing indicator.

Claim 9 (Currently Amended): A bar code reader according to claim 3, wherein the rotation position detection means is comprised of a sensing indicator provided on the rotatory optical deflector, and a reflection [[type]] photosensor for sensing the sensing indicator, disposed in vicinity of a passage of the sensing indicator.

Claim 10 (Currently Amended): A bar code reader according to claim 4, wherein the rotation position detection means is comprised of a sensing indicator provided on the rotatory optical deflector, and a reflection [[type]] photosensor for sensing the sensing indicator, disposed in vicinity of a passage of the sensing indicator.

Claim 11 (Currently Amended): A bar code reader according to claim 7, wherein the sensing indicator is a strip provided such that [[it]] the strip protrudes from [[the]] an underside face of the rotatory optical deflector.

Claim 12 (Currently Amended): A bar code reader according to claim 8, wherein the sensmg indicator is a strip provided such that [[it]] the strip protrudes from [[the]] an underside face of the rotatory optical deflector.

Claim 13 (Currently Amended): A bar code reader according to claim 9, wherein the sensing indicator is a strip provided such that [[it]] the strip protrudes from [[the]] an underside face of the rotatory optical deflector.

Claim 14 (Currently Amended): A bar code reader according to claim 10, wherein the

sensing indicator is a strip provided such that [[it]] the strip protrudes from [[the]] an underside face of the rotatory optical deflector.

Claim 15 (Currently Amended): A bar code reader according to claim 7, wherein the sensmg indicator is a coated stripe formed on [[the]] an underside face of the rotatory optical deflector by printing or painting with ink or paint, having reflectance differing from that of the underside face.

Claim 16 (Currently Amended): A bar code reader according to claim 8, wherein the sensmg indicator is a coated stripe formed on [[the]] an underside face of the rotatory optical deflector by printing or painting with ink or paint, having reflectance differing from that of the underside face.

Claim 17 (Currently Amended): A bar code reader according to claim 9, wherein the sensmg indicator is a coated stripe formed on [[the]] an underside face of the rotatory optical deflector by printing or painting with ink or paint, having reflectance differing from that of the underside face.

Claim 18 (Currently Amended): A bar code reader according to claim 10, wherein the sensing indicator is a coated stripe formed on [[the]] an underside face of the rotatory optical deflector by printing or painting with ink or paint, having reflectance differing from that of the underside face.

Claim 19 (Original): A bar code reader according to claim 7, wherein the sensing indicator is a slit formed on a plate for detection, attached to the rotatory optical deflector.

Claim 20 (Original): A bar code reader according to claim 8, wherein the sensmg indicator is a slit formed on a plate for detection, attached to the rotatory optical deflector.

Claim 21 (Original): A bar code reader according to claim 9, wherein the sensmg indicator is a slit formed on a plate for detection, attached to the rotatory optical deflector.

Claim 22 (Original): A bar code reader according to claim 10, wherein the sensing indicator is a slit formed on a plate for detection, attached to the rotatory optical deflector.

Claims 23-34 cancelled.

Claim 35 (Original): A bar code reader provided with a laser diode and a rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a means for selecting either automatic scanning or manual scanning;

a rotation position detection means for detecting a rotation position of the rotatory optical deflector at two spots corresponding to opposite edges of a laser beam scanning range of a bar code, respectively, and at a spot situated between the two spots; and

a means comprising a function of stopping rotation of the rotatory optical deflector for only a predetermined time length upon the rotation position detection means detecting the rotation position of the rotatory optical deflector at the two spots, respectively, in a case of the automatic scanning being selected, and a function of stopping the rotation of the rotatory optical deflector through locking upon the rotation position detection means detecting the rotation position of the rotatory optical deflector at the spot situated between the two spots in a case of the manual scanning being selected.

Claim 36 (Currently Amended): A bar code reader provided with a laser diode and a

rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a means for selecting either automatic scanning or manual scanning;

a rotation position detection means for detecting a rotation position of the rotatory optical deflector at two spots corresponding to [[the]] opposite edges of a laser beam scanning range of a bar code, respectively, and at a spot situated between the two spots; and

a means comprising a function of slowing down a rotation speed of the rotatory optical deflector during a period of bar code reading from a time of the rotation position detection means detecting one of the rotation positions at the two spots up to the rotation position detection means detecting the other of the rotation positions while rotating the rotatory optical deflector at a higher speed in other periods, in a case of the automatic scanning being selected, and a function of stopping the rotation of the rotatory optical deflector through locking upon the rotation position detection means detecting the rotation position of the rotatory optical deflector at the spot situated between the two spots in a case of the manual scanning being selected.

Claim 37 (Currently Amended): A bar code reader according to claim 35, wherein the rotation position detection means of detecting the rotation position of the rotatory optical deflector at the two spots corresponding to the opposite edges of the laser beam scanning range of the bar code, and at the spot situated between the two spots, respectively, are comprised of three sensing indicators provided at predetermined intervals in a direction of rotation of the rotatory optical deflector, and a reflection [[type]] photosensor for sensing the three sensing indicators, disposed in vicinity of passages of the three sensing indicators.

Claim 38 (Original): A bar code reader according to claim 36, wherein the rotation position detection means of detecting the rotation position of the rotatory optical deflector at the two spots corresponding to the opposite edges of the laser beam scanning range of the bar code, and at the spot situated between the two spots, respectively, are comprised of three sensing indicators provided at predetermined intervals in a direction of rotation of the rotatory optical deflector, and a reflection type photosensor for sensing the three sensing indicators, disposed in vicinity of passages of the three sensing indicators.

Claim 39 (Original): A bar code reader according to claim 37, wherein the three sensing indicators are provided on the rotatory optical deflector, radially from a center of rotation thereof at a predetermined angular interval, respectively.

Claim 40 (Original): A bar code reader according to claim 38, wherein the three sensing indicators are provided on the rotatory optical deflector, radially from a center of rotation thereof at a predetermined angular interval, respectively.

Claim 41 (Currently Amended): A bar code reader according to claim 37, wherein the three sensing indicators are strips provided such that [[they]] the stripes protrude from an underside face of the rotatory optical deflector.

Claim 42 (Currently Amended): A bar code reader according to claim 38, wherein the three sensing indicators are strips provided such that [[they]] the stripes protrude from an underside face of the rotatory optical deflector.

Claim 43 (Currently Amended): A bar code reader according to claim 37, wherein the three sensing indicators are coated stripes formed on [[the]] an underside face of the rotatory optical deflector by printing or painting with ink or paint, having reflectance differing from that of an underside face.

Claim 44 (Currently Amended): A bar code reader according to claim 38, wherein the three sensing indicators are coated stripes formed on [[the]] an underside face of the rotatory optical deflector by printing or painting with ink or paint, having reflectance differing from that of an underside face.

Claim 45 (Original): A bar code reader according to claim 37, wherein the three sensing indicators are slits formed on a plate for detection, attached to the rotatory optical deflector.

Claim 46 (Original): A bar code reader according to claim 38, wherein the three sensing indicators are slits formed on a plate for detection, attached to the rotatory optical deflector.

Claim 47 (Currently Amended): A bar code reader provided with a laser diode and a rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a means for detecting rotation position of the rotatory optical deflector at two spots corresponding to opposite edges of a laser beam scanning range of a bar code, respectively; and

a means for stopping rotation of the rotatory optical deflector for only a predetermined

time length upon the means for detecting rotation position detecting the rotation position of the rotatory optical deflector at the two spots, respectively[[;]].

Claim 48 (Original): A bar code reader provided with a laser diode and a rotatory optical deflector for deflecting a laser beam emitted by the laser diode for scanning, said bar code reader comprising:

a means for detecting rotation position of the rotatory optical deflector at two spots corresponding to opposite edges of a laser beam scanning range of a bar code, respectively; and

a means for reducing a rotation speed of the rotatory optical deflector during a time period from a time of the means for detecting rotation position detecting a rotation position of the rotatory optical deflector corresponding to a scanning start edge, up to a time of the means for detecting rotation position detecting a rotation position of the rotatory optical deflector corresponding to a scanning completion edge, from a rotation speed in other periods.

Claim 49 (Currently Amended): A bar code reader according to claim 47, wherein the means for detecting rotation position of the rotatory optical deflector at the two spots corresponding to the opposite edges of the laser beam scanning range of the bar code is comprised of a pair of sensing indicators provided at a predetermined interval in the direction of rotation of the rotatory optical deflector, and a reflection [[type]] photosensor for sensing the pair of sensing indicators, disposed in vicinity of passages of the pair of the sensing indicators.

Claim 50 (Currently Amended): A bar code reader according to claim 48, wherein the means for detecting rotation position of the rotatory optical deflector at the two spots

corresponding to the opposite edges of the laser beam scanning range of the bar code is comprised of a pair of sensing indicators provided at a predetermined interval in the direction of rotation of the rotatory optical deflector, and a reflection [[type]] photosensor for sensing the pair of sensing indicators, disposed in vicinity of passages of the pair of the sensing indicators.

Claim 51 (Original): A bar code reader according to claim 49, wherein the pair of the sensing indicators are provided on the rotatory optical deflector, radially from a center of rotation thereof at a predetermined angular interval.

Claim 52 (Original): A bar code reader according to claim 50, wherein the pair of the sensing indicators are provided on the rotatory optical deflector, radially from a center of rotation thereof at a predetermined angular interval.

Claim 53 (Currently Amended): A bar code reader according to claim 49, wherein the pair of the sensing indicators are a pair of strips provided such that [[they]] the pair of stripes protrude from an underside face of the rotatory optical deflector.

Claim 54 (Currently Amended): A bar code reader according to claim 50, wherein the pair of the sensing indicators are a pair of strips provided such that [[they]] the pair of stripes protrude from an underside face of the rotatory optical deflector.

Claim 55 (Original): A bar code reader according to claim 49, wherein the pair of the sensing indicators are a pair of coated stripes formed on an underside face of the rotatory optical

deflector by printing or painting with ink or paint, having reflectance differing from that of the underside face.

Claim 56 (Original): A bar code reader according to claim 50, wherein the pair of the sensing indicators are a pair of coated stripes formed on an underside face of the rotatory optical deflector by printing or painting with ink or paint, having reflectance differing from that of the underside face.

Claim 57 (Original): A bar code reader according to claim 49, wherein the pair of the sensing indicators are a pair of slits formed on a plate for detection, attached to the rotatory optical deflector.

Claim 58 (Original): A bar code reader according to claim 50, wherein the pair of the sensing indicators are a pair of slits formed on a plate for detection, attached to the rotatory optical deflector.